1. A wood drying installation comprising a wood drying kiln, electrodes adapted to be inserted into wood contained in said kiln, a resistance connected in a series circuit with said electrodes, an AC voltage source connected to apply an AC voltage across said series circuit, a phase detecting circuit connected to said series circuit operable to generate a signal representing the phase angle between AC voltages applied to different parts of said series circuit, and a processor connected to receive said signal and operable to determine a value corresponding to a capacitive component of the reactive impedance between said electrodes in accordance with a predetermined arithmetic algorithm relating said value to said phase angle.

2. A wood drying installation as recited in claim 1, wherein the voltages applied to different parts of said series circuit comprise a voltage applied across said electrodes and the voltage applied across said series circuit.

3. A wood drying installation as recited in claim 1, wherein said arithmetic algorithm expresses said value as a function of said phase angle, said voltage, and said resistance.

4. A wood drying installation as recited in claim 1, wherein said processor determines the capacitance of said reactive impedance.

5. A wood drying installation as recited in claim 1, wherein said phase detecting circuit converts said AC voltages applied to different parts of said series circuit to square wave voltages and an exclusive or circuit receiving said square wave voltages.

6. A wood drying installation as recited in claim 5, wherein said circuit further comprises an RMS-to-DC converter connected to receive the output of said exclusive or circuit.

7. A method of measuring the moisture content of a stack of wood in a kiln comprising placing electrodes in said stack of wood in said kiln, connecting a known series resistance in series with said electrodes, applying a AC voltage across said series circuit, detecting AC voltages applied

to different parts of said series circuit, determining the phase angel between said AC voltages applied to different parts of said circuit, and calculating a value corresponding to the capacitive reactance of the reactive impedance between said electrodes in accordance with an arithmetic algorithm relating said phase angle, V1 and V2 to said capacitance value.

8. A method as recited in claim 7, wherein said value comprises the capacitance of said reactive impedance.

9. A method as recited in claim 7, wherein said voltages applied to parts of said series circuit comprise the voltage applied across said series circuit and a voltage applied across said electrodes.

10. A method as recited in claim 7, wherein said arithmetic algorithm expresses said value as a function of said phase angle, said voltages, and said resistance.

11. A system for measuring reactive impedance of a material adapted to be inserted in said material, comprising a resistance connected in a series circuit with electrodes, an AC voltage source connected to apply an AC voltage across said series circuit, a phase detecting circuit connected to said series circuit operable to generate a signal representing the phase angle between AC voltages applied to different parts of said series circuit, and a processor connected to receive said signal and operable to determine a value corresponding to a capacitive component of the reactive impedance between said electrodes in accordance with a predetermined arithmetic algorithm relating said value to said phase angle.

12. A system as recited in claim 11, wherein the voltages applied to different parts of said series circuit comprise a voltage applied across said electrodes and the voltage applied across said series circuit.

13. A system as recited in claim 11, wherein said arithmetic algorithm expresses said

value as a function of said phase angle, said voltages, and said resistance.

14. A system recited in claim 11, wherein said processor determines the capacitance of said reactive impedance.

15. A system as recited in claim 11, wherein said phase detecting circuit converts said AC voltages applied to different parts of said series circuit to square wave voltages and an exclusive or circuit receiving said square wave voltages.

16. A system as recited in claim 15 , wherein said circuit further comprises an RMS-to-DC converter connected to receive the output of said exclusive or circuit.

17. A method of measuring the reactive impedance of a material comprising placing electrodes in said material, connecting a known series resistance in series with said electrodes, applying a AC voltage across said series circuit, detecting AC voltages applied to different parts of said series circuit, determining the phase angle between said AC voltages applied to different parts of said circuit, and calculating a value corresponding to the capacitive reactance of the reactive impedance between said electrodes in accordance with an arithmetic algorithm relating said phase angle, V1 and V2 to said value.

18. A method as recited in claim 17, wherein said value comprises the capacitance of said reactive impedance.

19. A method as recited in claim 17 , wherein said voltages applied to parts of said series circuit comprise the voltage applied across said series circuit and a voltage applied across said electrodes.

20. A method as recited in claim 17, wherein said arithmetic algorithm expresses said value as a function of said phase angle, said voltages, and said resistance.

21. A wood drying installation comprising

a wood drying kiln,

electrodes adapted to be inserted into wood contained in said kiln,

a resistance connected in a series circuit with said electrodes,

an AC voltage source connected to apply an AC voltage across said series circuit,

a phase detecting circuit connected to said series circuit operable to generate a signal representing a phase angle between AC voltages applied to different parts of said series circuit, and

a processor connected to receive said signal and operable to determine a value corresponding to at least one of an independent capacitive component and an independent resistive component of a reactive impedance between said electrodes in accordance with a predetermined arithmetic algorithm which expresses said value as a function of said phase angle, said voltages and said resistance.

22. wood drying installation as recited in claim 21, wherein said voltages applied to different parts of said series circuit comprise a voltage applied across said electrodes and a voltage applied across said series circuit.

23. wood drying installation as recited in claim 21, wherein said phase detecting circuit converts said AC voltages applied to different parts of said series circuit to square wave voltages and an exclusive or circuit receiving said square wave voltages.

24. A wood drying installation as recited in claim 23, wherein said circuit further comprises an RMS-to-DC converter connected to receive an output of said exclusive or circuit.

25. A wood drying installation as recited in claim 21, wherein said AC voltage source provides a sinusoidal voltage.

26. A method of measuring the moisture content of a stack of wood in a kiln comprising

placing electrodes in said stack of wood in said kiln, connecting a known series resistance in series with said electrodes,

applying a AC voltage across said series circuit,

detecting AC voltages applied to different parts of said series circuit,

determining a phase angle between said AC voltages applied to different parts of said circuit, and

calculating a value corresponding to at least one of an independent capacitive component and an independent resistive component of a reactive impedance between said electrodes in accordance with a predetermined arithmetic algorithm which expresses said value as a function of said phase angle, said voltages and said resistance.

27. A method as recited in claim 26, wherein said voltages applied to parts of said series circuit comprise the voltage applied across said series circuit and a voltage applied across said electrodes.

28. A method as recited in claim 26, wherein said independent capacitive component is calculated according to the equation

$$C_X = -V_1 \sin \phi / (2 p f R_s V_2)$$

wherein:

C_X is the value of the independent capacitive component

V_1 is the amplitude of the applied voltage

V_2 is the amplitude of the voltage across the electrodes

f is the frequency of the applied voltage

ϕ is the phase angle between the voltages V_1 and V_2

R_S is the resistance connected in series.

29. A method as recited in claim 26, wherein said independent resistive component is calculated according to the equation

$$R_X = R_S V_2 /(V_1 \cos \phi - V_2)$$

wherein:

R_X is the value of the independent resistive component

V_1 is the amplitude of the applied voltage

V_2 is the amplitude of the voltage across the electrodes

ϕ is the phase angle between the voltages V_1 and V_2

R_S is the resistance connected in series.

30. A method as recited in claim 26, wherein the moisture content of the wood is above a fiber saturation point of the wood.

31. A system for measuring the reactive impedance between electrodes which are inserted in a dielectric material, wherein said system comprises

a resistance connected in a series circuit with said electrodes,

an AC voltage source connected to apply an AC voltage across said series circuit,

a phase detecting circuit connected to said series circuit operable to generate a signal representing a phase angle between AC voltages applied to different parts of said series circuit, and

a processor connected to receive said signal and operable to determine a value corresponding to at least one of an independent capacitive component and an independent

resistive component of said reactive impedance in accordance with a predetermined arithmetic algorithm which expresses said value as a function of said phase angle, said voltages and said resistance.

32. A system as recited in claim 31, wherein the voltages applied to different parts of said series circuit comprise a voltage applied across said electrodes and the voltage applied across said series circuit.

33. A system as recited in claim 31, wherein said phase detecting circuit converts said AC voltages applied to different parts of said series circuit to square wave voltages and an exclusive or circuit receiving said square wave voltages.

34. A system as recited in claim 33, wherein said circuit further comprises an RMS-to-DC converter connected to receive the output of said exclusive or circuit.

35. A system as recited in claim 31, wherein said AC voltage source provides a sinusoidal voltage.

36. A method of measuring the reactive impedance of a material comprising placing electrodes in said material, connecting a known resistance in series with said electrodes, applying a AC voltage across said series circuit, detecting AC voltages applied to different parts of said series circuit, determining a phase angle between said AC voltages applied to different parts of said circuit, and calculating a value corresponding to at least one of an independent capacitive component and an independent resistive component of the reactive impedance between said electrodes in accordance with a predetermined arithmetic algorithm which expresses said value as a function of said phase angle, said voltages and said resistance.

37. A method as recited in claim 36, wherein said voltages applied to parts of said series circuit comprise the voltage applied across said series circuit and a voltage applied across said electrodes.

38. A method as recited in claim 37, wherein at least one of said voltages comprises a sinusoidal voltage.

39. A method as recited in claim 36, wherein said independent capacitive component is calculated according to the equation

$$C_x = - V_1 \sin \phi / (2 p f R_s V_2)$$

wherein:

C_x is the value of the independent capacitive component

V_1 is the amplitude of the applied voltage

V_2 is the amplitude of the voltage across the electrodes

f is the frequency of the applied voltage

ϕ is the phase angle between the voltages V_1 and V_2

R_s is the resistance connected in series.

40. A method as recited in claim 36, wherein said independent resistive component is calculated according to the equation

$$R_x = R_s V_2 / (V_1 \cos \phi - V_2)$$

wherein:

R_x is the value of the independent resistive component

V_1 is the amplitude of the applied voltage

V_2 is the amplitude of the voltage across the electrodes

ϕ is the phase angle between the voltages V_1 and V_2

R_s is the resistance connected in series.